

SEQUENCE LISTING

<110> Brett P. Monia
Susan M. Freier
Scott Cooper

<120> ANTISENSE MODULATION OF FIBROBLAST GROWTH FACTOR RECEPTOR 2
EXPRESSION

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aagtgactgc agcagcagcg gcagcgctc ggttcctgag cccaccgcag gctgaaggca 180

ttgcgcgtag tccatgcccg tagaggaagt gtgcagatgg gattaacgtc cacatggaga 240

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Met Val Ser Trp Gly Arg Phe

1

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atc tgc ctg gtc gtg gtc acc atg gca acc ttg tcc ctg gcc cgg ccc 342

Ile Cys Leu Val Val Val Thr Met Ala Thr Leu Ser Leu Ala Arg Pro

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Ser Phe Ser Leu Val Glu Asp Thr Thr Leu Glu Pro Glu Glu Pro Pro

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Glu Ser Leu Glu Val Arg Cys Leu Leu Lys Asp Ala Ala Val Ile Ser

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Trp Thr Lys Asp Gly Val His Leu Gly Pro Asn Asn Arg Thr Val Leu

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Phe Met Val Asn Val Thr Asp Ala Ile Ser Ser Gly Asp Asp Glu Asp	
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Ala Ile Ser Ser Gly Asp Asp Glu Asp Asp Thr Asp Ser Ser Glu Asp	
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Val His Lys Leu Thr Lys Arg Ile Pro Leu Arg Arg Gln Val Thr Val	
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agcccgggag gcttggcgcc ggcgaagacc caaggaccac tcttctgcgt ttggagttgc 180

tccccgcaac cccgggctcg tcgctttctc catcccgacc cacgcggggc cggggacaac 240

acaggtcgcg gaggagcgtt gccattcaag tgactgcagc agcagcgcag cgcctcggtt 300

cctgagccca ccgcagctga aggcattgcy cgtagtccat gcccgtagag gaagtgtgca 360

gatgggatta acgtccacat ggagatatgg aagaggaccg gggattggta ccgtaacc 418

atg gtc agc tgg ggt cgt ttc atc tgc ctg gtc gtg gtc acc atg gca 466

Met Val Ser Trp Gly Arg Phe Ile Cys Leu Val Val Val Thr Met Ala

1

5

10

15

acc ttg tcc ctg gcc cgg ccc tcc ttc agt tta gtt gag gat acc aca 514

Thr Leu Ser Leu Ala Arg Pro Ser Phe Ser Leu Val Glu Asp Thr Thr

20

25

30

tta gag cca gaa gag cca cca acc aaa tac caa atc tct caa cca gaa 562

Leu Glu Pro Glu Glu Pro Pro Thr Lys Tyr Gln Ile Ser Gln Pro Glu

35

40

45

gtg tac gtg gct gcg cca ggg gag tcg cta gag gtg cgc tgc ctg ttg 610

Val Tyr Val Ala Ala Pro Gly Glu Ser Leu Glu Val Arg Cys Leu Leu	
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aaa gat gcc gcc gtg atc agt tgg act aag gat ggg gtg cac ttg ggg	658
Lys Asp Ala Ala Val Ile Ser Trp Thr Lys Asp Gly Val His Leu Gly	
65 70 75 80	
ccc aac aat agg aca gtg ctt att ggg gag tac ttg cag ata aag ggc	706
Pro Asn Asn Arg Thr Val Leu Ile Gly Glu Tyr Leu Gln Ile Lys Gly	
85 90 95	
gcc aca cct aga gac tcc ggc ctc tat gct tgt act gcc agt agg act	754
Ala Thr Pro Arg Asp Ser Gly Leu Tyr Ala Cys Thr Ala Ser Arg Thr	
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gta gac agt gaa act tgg tac ttc atg gtg aat gtc aca gat gcc atc	802
Val Asp Ser Glu Thr Trp Tyr Phe Met Val Asn Val Thr Asp Ala Ile	
115 120 125	
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Ser Ser Gly Asp Asp Glu Asp Asp Thr Asp Gly Ala Glu Asp Phe Val	
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agt gag aac agt aac aac aag aga gca cca tac tgg acc aac aca gaa	898
Ser Glu Asn Ser Asn Asn Lys Arg Ala Pro Tyr Trp Thr Asn Thr Glu	
145 150 155 160	
aag atg gaa aag cgg ctc cat gct gtg cct gcg gcc aac act gtc aag	946
Lys Met Glu Lys Arg Leu His Ala Val Pro Ala Ala Asn Thr Val Lys	
165 170 175	
ttt cgc tgc cca gcc ggg ggg aac cca atg cca acc atg cgg tgg ctg	994
Phe Arg Cys Pro Ala Gly Gly Asn Pro Met Pro Thr Met Arg Trp Leu	
180 185 190	
aaa aac ggg aag gag ttt aag cag gag cat cgc att gga ggc tac aag	1042
Lys Asn Gly Lys Glu Phe Lys Gln Glu His Arg Ile Gly Gly Tyr Lys	
195 200 205	
gta cga aac cag cac tgg agc ctc att atg gaa agt gtg gtc cca tct	1090
Val Arg Asn Gln His Trp Ser Leu Ile Met Glu Ser Val Val Pro Ser	
210 215 220	
gac aag gga aat tat acc tgt gta gtg gag aat gaa tac ggg tcc atc	1138

Asp	Lys	Gly	Asn	Tyr	Thr	Cys	Val	Val	Glu	Asn	Glu	Tyr	Gly	Ser	Ile	
225											235					240
aat	cac	acg	tac	cac	ctg	gat	gtt	gtg	gag	cga	tcg	cct	cac	cgg	ccc	1186
Asn	His	Thr	Tyr	His	Leu	Asp	Val	Val	Glu	Arg	Ser	Pro	His	Arg	Pro	
				245					250					255		
atc	ctc	caa	gcc	gga	ctg	ccg	gca	aat	gcc	tcc	aca	gtg	gtc	gga	gga	1234
Ile	Leu	Gln	Ala	Gly	Leu	Pro	Ala	Asn	Ala	Ser	Thr	Val	Val	Gly	Gly	
			260					265					270			
gac	gta	gag	ttt	gtc	tgc	aag	gtt	tac	agt	gat	gcc	cag	ccc	cac	atc	1282
Asp	Val	Glu	Phe	Val	Cys	Lys	Val	Tyr	Ser	Asp	Ala	Gln	Pro	His	Ile	
		275					280					285				
cag	tgg	atc	aag	cac	gtg	gaa	aag	aac	ggc	agt	aaa	tac	ggg	ccc	gac	1330
Gln	Trp	Ile	Lys	His	Val	Glu	Lys	Asn	Gly	Ser	Lys	Tyr	Gly	Pro	Asp	
	290					295					300					
ggg	ctg	ccc	tac	ctc	aag	gtt	ctc	aag	cac	tcg	ggg	ata	aat	agt	tcc	1378
Gly	Leu	Pro	Tyr	Leu	Lys	Val	Leu	Lys	His	Ser	Gly	Ile	Asn	Ser	Ser	
305					310					315					320	
aat	gca	gaa	gtg	ctg	gct	ctg	ttc	aat	gtg	acc	gag	gcg	gat	gct	ggg	1426
Asn	Ala	Glu	Val	Leu	Ala	Leu	Phe	Asn	Val	Thr	Glu	Ala	Asp	Ala	Gly	
				325					330					335		
gaa	tat	ata	tgt	aag	gtc	tcc	aat	tat	ata	ggg	cag	gcc	aac	cag	tct	1474
Glu	Tyr	Ile	Cys	Lys	Val	Ser	Asn	Tyr	Ile	Gly	Gln	Ala	Asn	Gln	Ser	
			340					345					350			
gcc	tgg	ctc	act	gtc	ctg	cca	aaa	cag	caa	gcg	cct	gga	aga	gaa	aag	1522
Ala	Trp	Leu	Thr	Val	Leu	Pro	Lys	Gln	Gln	Ala	Pro	Gly	Arg	Glu	Lys	
		355					360					365				
gag	att	aca	gct	tcc	cca	gac	tac	ctg	gag	ata	gcc	att	tac	tgc	ata	1570
Glu	Ile	Thr	Ala	Ser	Pro	Asp	Tyr	Leu	Glu	Ile	Ala	Ile	Tyr	Cys	Ile	
	370					375					380					
ggg	gtc	ttc	tta	atc	gcc	tgt	atg	gtg	gta	aca	gtc	atc	ctg	tgc	cga	1618
Gly	Val	Phe	Leu	Ile	Ala	Cys	Met	Val	Val	Thr	Val	Ile	Leu	Cys	Arg	
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Met Lys Asn Thr Thr Lys Lys Pro Asp Phe Ser Ser Gln Pro Ala Val	
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His Lys Leu Thr Lys Arg Ile Pro Leu Arg Arg Gln Val Thr Val Ser	
420 425 430	
gct gag tcc agc tcc tcc atg aac tcc aac acc ccg ctg gtg agg ata	1762
Ala Glu Ser Ser Ser Ser Met Asn Ser Asn Thr Pro Leu Val Arg Ile	
435 440 445	
aca aca cgc ctc tct tca acg gca gac acc ccc atg ctg gca ggg gtc	1810
Thr Thr Arg Leu Ser Ser Thr Ala Asp Thr Pro Met Leu Ala Gly Val	
450 455 460	
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Ser Glu Tyr Glu Leu Pro Glu Asp Pro Lys Trp Glu Phe Pro Arg Asp	
465 470 475 480	
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Lys Leu Thr Leu Gly Lys Pro Leu Gly Glu Gly Cys Phe Gly Gln Val	
485 490 495	
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Val Met Ala Glu Ala Val Gly Ile Asp Lys Asp Lys Pro Lys Glu Ala	
500 505 510	
gtc acc gtg gcc gtg aag atg ttg aaa gat gat gcc aca gag aaa gac	2002
Val Thr Val Ala Val Lys Met Leu Lys Asp Asp Ala Thr Glu Lys Asp	
515 520 525	
ctt tct gat ctg gtg tca gag atg gag atg atg aag atg att ggg aaa	2050
Leu Ser Asp Leu Val Ser Glu Met Glu Met Met Lys Met Ile Gly Lys	
530 535 540	
cac aag aat atc ata aat ctt ctt gga gcc tgc aca cag gat ggg cct	2098
His Lys Asn Ile Ile Asn Leu Leu Gly Ala Cys Thr Gln Asp Gly Pro	
545 550 555 560	
ctc tat gtc ata gtt gag tat gcc tct aaa ggc aac ctc cga gaa tac	2146
Leu Tyr Val Ile Val Glu Tyr Ala Ser Lys Gly Asn Leu Arg Glu Tyr	
565 570 575	
ctc cga gcc cgg agg cca ccc ggg atg gag tac tcc tat gac att aac	2194

Leu Arg Ala Arg Arg Pro Pro Gly Met Glu Tyr Ser Tyr Asp Ile Asn
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cgt gtt cct gag gag cag atg acc ttc aag gac ttg gtg tca tgc acc 2242
 Arg Val Pro Glu Glu Gln Met Thr Phe Lys Asp Leu Val Ser Cys Thr
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tac cag ctg gcc aga cgg atg gag tac ttg gct tcc caa aaa tgt att 2290
 Tyr Gln Leu Ala Arg Arg Met Glu Tyr Leu Ala Ser Gln Lys Cys Ile
 610 615 620

cat cga gat tta gca gcc aga aat gtt ttg gta aca gaa aac aat gtg 2338
 His Arg Asp Leu Ala Ala Arg Asn Val Leu Val Thr Glu Asn Asn Val
 625 630 635 640

atg aaa ata gca gac ttt gga ctc gcc aga gat atc aac aat ata gac 2386
 Met Lys Ile Ala Asp Phe Gly Leu Ala Arg Asp Ile Asn Asn Ile Asp
 645 650 655

tat tac aaa aag acc acc aat ggg cgg ctt cca gtc aag tgg atg gct 2434
 Tyr Tyr Lys Lys Thr Thr Asn Gly Arg Leu Pro Val Lys Trp Met Ala
 660 665 670

cca gaa gcc ctg ttt gat aga gta tac act cat cag agt gat gtc tgg 2482
 Pro Glu Ala Leu Phe Asp Arg Val Tyr Thr His Gln Ser Asp Val Trp
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 Ser Phe Gly Val Leu Met Trp Glu Ile Phe Thr Leu Gly Gly Ser Pro
 690 695 700

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 Tyr Pro Gly Ile Pro Val Glu Glu Leu Phe Lys Leu Leu Lys Glu Gly
 705 710 715 720

cac aga atg gat aag cca gcc aac tgc acc aac gaa ctg tac atg atg 2626
 His Arg Met Asp Lys Pro Ala Asn Cys Thr Asn Glu Leu Tyr Met Met
 725 730 735

atg agg gac tgt tgg cat gca gtg ccc tcc cag aga cca acg ttc aag 2674
 Met Arg Asp Cys Trp His Ala Val Pro Ser Gln Arg Pro Thr Phe Lys
 740 745 750

cag ttg gta gaa gac ttg gat cga att ctc act ctc aca acc aat gag 2722

Gln Leu Val Glu Asp Leu Asp Arg Ile Leu Thr Leu Thr Thr Asn Glu
 755 760 765

cga att ctc act ctc aca acc aat gag aac ttc cag agc acc tca gga 2770
 Arg Ile Leu Thr Leu Thr Thr Asn Glu Asn Phe Gln Ser Thr Ser Gly
 770 775 780

aga gag ggc acg gag att cat gct ctt caa tgc ctc aga tcg gaa gta 2818
 Arg Glu Gly Thr Glu Ile His Ala Leu Gln Cys Leu Arg Ser Glu Val
 785 790 795 800

aca cct gcc att tcc tgt gag agc cca ttg gct gac act ggt tcc aag 2866
 Thr Pro Ala Ile Ser Cys Glu Ser Pro Leu Ala Asp Thr Gly Ser Lys
 805 810 815

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acaggtcgcg gaggagcgtt gccattcaag tgactgcagc agcagcgcag cgctcgggtt 300

cctgagccca ccgcagctga aggcattgcg cgtagtcctat gcccgtagag gaagtgtgca 360
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 atg gtc agc tgg ggt cgt ttc atc tgc ctg gtc gtg gtc acc atg gca 466
 Met Val Ser Trp Gly Arg Phe Ile Cys Leu Val Val Val Thr Met Ala
 1 5 10 15

 acc ttg tcc ctg gcc cgg ccc tcc ttc agt tta gtt gag gat acc aca 514
 Thr Leu Ser Leu Ala Arg Pro Ser Phe Ser Leu Val Glu Asp Thr Thr
 20 25 30

 tta gag cca gaa gag cca cca acc aaa tac caa atc tct caa cca gaa 562
 Leu Glu Pro Glu Glu Pro Pro Thr Lys Tyr Gln Ile Ser Gln Pro Glu
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 gtg tac gtg gct gcg cca ggg gag tcg cta gag gtg cgc tgc ctg ttg 610
 Val Tyr Val Ala Ala Pro Gly Glu Ser Leu Glu Val Arg Cys Leu Leu
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 aaa gat gcc gcc gtg atc agt tgg act aag gat ggg gtg cac ttg ggg 658
 Lys Asp Ala Ala Val Ile Ser Trp Thr Lys Asp Gly Val His Leu Gly
 65 70 75 80

 ccc aac aat agg aca gtg ctt att ggg gag tac ttg cag ata aag ggc 706
 Pro Asn Asn Arg Thr Val Leu Ile Gly Glu Tyr Leu Gln Ile Lys Gly
 85 90 95

 gcc aca cct aga gac tcc ggc ctc tat gct tgt act gcc agt agg act 754
 Ala Thr Pro Arg Asp Ser Gly Leu Tyr Ala Cys Thr Ala Ser Arg Thr
 100 105 110

 gta gac agt gaa act tgg tac ttc atg gtg aat gtc aca gat gcc atc 802
 Val Asp Ser Glu Thr Trp Tyr Phe Met Val Asn Val Thr Asp Ala Ile
 115 120 125

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 Ser Ser Gly Asp Asp Glu Asp Asp Thr Asp Gly Ala Glu Asp Phe Val
 130 135 140

 agt gag aac agt aac aac aag aga gca cca tac tgg acc aac aca gaa 898
 Ser Glu Asn Ser Asn Asn Lys Arg Ala Pro Tyr Trp Thr Asn Thr Glu

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aag atg gaa aag cgg ctc cat gct gtg cct gcg gcc aac act gtc aag				946
Lys Met Glu Lys Arg Leu His Ala Val Pro Ala Ala Asn Thr Val Lys				
	165	170	175	
ttt cgc tgc cca gcc ggg ggg aac cca atg cca acc atg cgg tgg ctg				994
Phe Arg Cys Pro Ala Gly Gly Asn Pro Met Pro Thr Met Arg Trp Leu				
	180	185	190	
aaa aac ggg aag gag ttt aag cag gag cat cgc att gga ggc tac aag				1042
Lys Asn Gly Lys Glu Phe Lys Gln Glu His Arg Ile Gly Gly Tyr Lys				
	195	200	205	
gta cga aac cag cac tgg agc ctc att atg gaa agt gtg gtc cca tct				1090
Val Arg Asn Gln His Trp Ser Leu Ile Met Glu Ser Val Val Pro Ser				
	210	215	220	
gac aag gga aat tat acc tgt gta gtg gag aat gaa tac ggg tcc atc				1138
Asp Lys Gly Asn Tyr Thr Cys Val Val Glu Asn Glu Tyr Gly Ser Ile				
	225	230	235	240
aat cac acg tac cac ctg gat gtt gtg gag cga tcg cct cac cgg ccc				1186
Asn His Thr Tyr His Leu Asp Val Val Glu Arg Ser Pro His Arg Pro				
	245	250	255	
atc ctc caa gcc gga ctg ccg gca aat gcc tcc aca gtg gtc gga gga				1234
Ile Leu Gln Ala Gly Leu Pro Ala Asn Ala Ser Thr Val Val Gly Gly				
	260	265	270	
gac gta gag ttt gtc tgc aag gtt tac agt gat gcc cag ccc cac atc				1282
Asp Val Glu Phe Val Cys Lys Val Tyr Ser Asp Ala Gln Pro His Ile				
	275	280	285	
cag tgg atc aag cac gtg gaa aag aac ggc agt aaa tac ggg ccc gac				1330
Gln Trp Ile Lys His Val Glu Lys Asn Gly Ser Lys Tyr Gly Pro Asp				
	290	295	300	
ggg ctg ccc tac ctc aag gtt ctc aag cac tcg ggg ata aat agt tcc				1378
Gly Leu Pro Tyr Leu Lys Val Leu Lys His Ser Gly Ile Asn Ser Ser				
	305	310	315	320
aat gca gaa gtg ctg gct ctg ttc aat gtg acc gag gcg gat gct ggg				1426
Asn Ala Glu Val Leu Ala Leu Phe Asn Val Thr Glu Ala Asp Ala Gly				

	325		330		335	
	gaa tat ata tgt aag gtc tcc aat tat ata ggg cag gcc aac cag tct					1474
	Glu Tyr Ile Cys Lys Val Ser Asn Tyr Ile Gly Gln Ala Asn Gln Ser					
	340		345		350	
	gcc tgg ctc act gtc ctg cca aaa cag caa gcg cct gga aga gaa aag					1522
	Ala Trp Leu Thr Val Leu Pro Lys Gln Gln Ala Pro Gly Arg Glu Lys					
	355		360		365	
	gag att aca gct tcc cca gac tac ctg gag ata gcc att tac tgc ata					1570
	Glu Ile Thr Ala Ser Pro Asp Tyr Leu Glu Ile Ala Ile Tyr Cys Ile					
	370		375		380	
	ggg gtc ttc tta atc gcc tgt atg gtg gta aca gtc atc ctg tgc cga					1618
	Gly Val Phe Leu Ile Ala Cys Met Val Val Thr Val Ile Leu Cys Arg					
	385		390		395	400
	atg aag aac acg acc aag aag cca gac ttc agc agc cag ccg gct gtg					1666
	Met Lys Asn Thr Thr Lys Lys Pro Asp Phe Ser Ser Gln Pro Ala Val					
	405		410		415	
	cac aag ctg acc aaa cgt atc ccc ctg cgg aga cag gta aca gtt tcg					1714
	His Lys Leu Thr Lys Arg Ile Pro Leu Arg Arg Gln Val Thr Val Ser					
	420		425		430	
	gct gag tcc agc tcc tcc atg aac tcc aac acc ccg ctg gtg agg ata					1762
	Ala Glu Ser Ser Ser Ser Met Asn Ser Asn Thr Pro Leu Val Arg Ile					
	435		440		445	
	aca aca cgc ctc tct tca acg gca gac acc ccc atg ctg gca ggg gtc					1810
	Thr Thr Arg Leu Ser Ser Thr Ala Asp Thr Pro Met Leu Ala Gly Val					
	450		455		460	
	tcc gag tat gaa ctt cca gag gac cca aaa tgg gag ttt cca aga gat					1858
	Ser Glu Tyr Glu Leu Pro Glu Asp Pro Lys Trp Glu Phe Pro Arg Asp					
	465		470		475	480
	aag ctg aca ctg ggc aag ccc ctg gga gaa ggt tgc ttt ggg caa gtg					1906
	Lys Leu Thr Leu Gly Lys Pro Leu Gly Glu Gly Cys Phe Gly Gln Val					
	485		490		495	
	gtc atg gcg gaa gca gtg gga att gac aaa gac aag ccc aag gag gcg					1954
	Val Met Ala Glu Ala Val Gly Ile Asp Lys Asp Lys Pro Lys Glu Ala					

500	505	510	
gtc acc gtg gcc gtg aag atg ttg aaa gat gat gcc aca gag aaa gac			2002
Val Thr Val Ala Val Lys Met Leu Lys Asp Asp Ala Thr Glu Lys Asp			
515	520	525	
ctt tct gat ctg gtg tca gag atg gag atg atg aag atg att ggg aaa			2050
Leu Ser Asp Leu Val Ser Glu Met Glu Met Met Lys Met Ile Gly Lys			
530	535	540	
cac aag aat atc ata aat ctt ctt gga gcc tgc aca cag gat ggg cct			2098
His Lys Asn Ile Ile Asn Leu Leu Gly Ala Cys Thr Gln Asp Gly Pro			
545	550	555	560
ctc tat gtc ata gtt gag tat gcc tct aaa ggc aac ctc cga gaa tac			2146
Leu Tyr Val Ile Val Glu Tyr Ala Ser Lys Gly Asn Leu Arg Glu Tyr			
565	570	575	
ctc cga gcc cgg agg cca ccc ggg atg gag tac tcc tat gac att aac			2194
Leu Arg Ala Arg Arg Pro Pro Gly Met Glu Tyr Ser Tyr Asp Ile Asn			
580	585	590	
cgt gtt cct gag gag cag atg acc ttc aag gac ttg gtg tca tgc acc			2242
Arg Val Pro Glu Glu Gln Met Thr Phe Lys Asp Leu Val Ser Cys Thr			
595	600	605	
tac cag ctg gcc aga cgg atg gag tac ttg gct tcc caa aaa tgt att			2290
Tyr Gln Leu Ala Arg Arg Met Glu Tyr Leu Ala Ser Gln Lys Cys Ile			
610	615	620	
cat cga gat tta gca gcc aga aat gtt ttg gta aca gaa aac aat gtg			2338
His Arg Asp Leu Ala Ala Arg Asn Val Leu Val Thr Glu Asn Asn Val			
625	630	635	640
atg aaa ata gca gac ttt gga ctc gcc aga gat atc aac aat ata gac			2386
Met Lys Ile Ala Asp Phe Gly Leu Ala Arg Asp Ile Asn Asn Ile Asp			
645	650	655	
tat tac aaa aag acc acc aat ggg cgg ctt cca gtc aag tgg atg gct			2434
Tyr Tyr Lys Lys Thr Thr Asn Gly Arg Leu Pro Val Lys Trp Met Ala			
660	665	670	
cca gaa gcc ctg ttt gat aga gta tac act cat cag agt gat gtc tgg			2482
Pro Glu Ala Leu Phe Asp Arg Val Tyr Thr His Gln Ser Asp Val Trp			

675 680 685

tcc ttc ggg gtg tta atg tgg gag atc ttc act tta ggg ggc tcg ccc 2530
Ser Phe Gly Val Leu Met Trp Glu Ile Phe Thr Leu Gly Gly Ser Pro
690 695 700

tac cca ggg att ccc gtg gag gaa ctt ttt aag ctg ctg aag gaa gga 2578
Tyr Pro Gly Ile Pro Val Glu Glu Leu Phe Lys Leu Leu Lys Glu Gly
705 710 715 720

cac aga atg gat aag cca gcc aac tgc acc aac gaa ctg tac atg atg 2626
His Arg Met Asp Lys Pro Ala Asn Cys Thr Asn Glu Leu Tyr Met Met
725 730 735

atg agg gac tgt tgg cat gca gtg ccc tcc cag aga cca acg ttc aag 2674
Met Arg Asp Cys Trp His Ala Val Pro Ser Gln Arg Pro Thr Phe Lys
740 745 750

cag ttg gta gaa gac ttg gat cga att ctc act ctc aca acc aat gag 2722
Gln Leu Val Glu Asp Leu Asp Arg Ile Leu Thr Leu Thr Thr Asn Glu
755 760 765

cct cta tcc tga agagcgttgg accctggagc tgctggccac atcttgatct 2774
Pro Leu Ser
770

gccatatgtg gtccaagaat gaagtcaaca cgaaggagaa tgaagggtgct gagggataaa 2834

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 acaggtcgcg gaggagcgtt gccattcaag tgactgcagc agcagcgcag cgccctcggtt 300
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atg gtc agc tgg ggt cgt ttc atc tgc ctg gtc gtg gtc acc atg gca 466
 Met Val Ser Trp Gly Arg Phe Ile Cys Leu Val Val Val Thr Met Ala
 1 5 10 15

acc ttg tcc ctg gcc cgg ccc tcc ttc agt tta gtt gag gat acc aca 514
 Thr Leu Ser Leu Ala Arg Pro Ser Phe Ser Leu Val Glu Asp Thr Thr
 20 25 30

tta gag cca gaa gag cca cca acc aaa tac caa atc tct caa cca gaa 562
 Leu Glu Pro Glu Glu Pro Pro Thr Lys Tyr Gln Ile Ser Gln Pro Glu
 35 40 45

gtg tac gtg gct gcg cca ggg gag tcg cta gag gtg cgc tgc ctg ttg 610
 Val Tyr Val Ala Ala Pro Gly Glu Ser Leu Glu Val Arg Cys Leu Leu
 50 55 60

aaa gat gcc gcc gtg atc agt tgg act aag gat ggg gtg cac ttg ggg 658
 Lys Asp Ala Ala Val Ile Ser Trp Thr Lys Asp Gly Val His Leu Gly
 65 70 75 80

ccc aac aat agg aca gtg ctt att ggg gag tac ttg cag ata aag ggc 706
 Pro Asn Asn Arg Thr Val Leu Ile Gly Glu Tyr Leu Gln Ile Lys Gly
 85 90 95

gcc aca cct aga gac tcc ggc ctc tat gct tgt act gcc agt agg act 754
 Ala Thr Pro Arg Asp Ser Gly Leu Tyr Ala Cys Thr Ala Ser Arg Thr
 100 105 110

gta gac agt gaa act tgg tac ttc atg gtg aat gtc aca gat gcc atc 802

Val Asp Ser Glu Thr Trp Tyr Phe Met Val Asn Val Thr Asp Ala Ile	
115 120 125	
tca tcc gga gat gat gag gat gac acc gat ggt gcg gaa gat ttt gtc	850
Ser Ser Gly Asp Asp Glu Asp Asp Thr Asp Gly Ala Glu Asp Phe Val	
130 135 140	
agt gag aac agt aac aac aag aga gca cca tac tgg acc aac aca gaa	898
Ser Glu Asn Ser Asn Asn Lys Arg Ala Pro Tyr Trp Thr Asn Thr Glu	
145 150 155 160	
aag atg gaa aag cgg ctc cat gct gtg cct gcg gcc aac act gtc aag	946
Lys Met Glu Lys Arg Leu His Ala Val Pro Ala Ala Asn Thr Val Lys	
165 170 175	
ttt cgc tgc cca gcc ggg ggg aac cca atg cca acc atg cgg tgg ctg	994
Phe Arg Cys Pro Ala Gly Gly Asn Pro Met Pro Thr Met Arg Trp Leu	
180 185 190	
aaa aac ggg aag gag ttt aag cag gag cat cgc att gga ggc tac aag	1042
Lys Asn Gly Lys Glu Phe Lys Gln Glu His Arg Ile Gly Gly Tyr Lys	
195 200 205	
gta cga aac cag cac tgg agc ctc att atg gaa agt gtg gtc cca tct	1090
Val Arg Asn Gln His Trp Ser Leu Ile Met Glu Ser Val Val Pro Ser	
210 215 220	
gac aag gga aat tat acc tgt gta gtg gag aat gaa tac ggg tcc atc	1138
Asp Lys Gly Asn Tyr Thr Cys Val Val Glu Asn Glu Tyr Gly Ser Ile	
225 230 235 240	
aat cac acg tac cac ctg gat gtt gtg gag cga tcg cct cac cgg ccc	1186
Asn His Thr Tyr His Leu Asp Val Val Glu Arg Ser Pro His Arg Pro	
245 250 255	
atc ctc caa gcc gga ctg ccg gca aat gcc tcc aca gtg gtc gga gga	1234
Ile Leu Gln Ala Gly Leu Pro Ala Asn Ala Ser Thr Val Val Gly Gly	
260 265 270	
gac gta gag ttt gtc tgc aag gtt tac agt gat gcc cag ccc cac atc	1282
Asp Val Glu Phe Val Cys Lys Val Tyr Ser Asp Ala Gln Pro His Ile	
275 280 285	
cag tgg atc aag cac gtg gaa aag aac ggc agt aaa tac ggg ccc gac	1330

Gln Trp Ile Lys His Val Glu Lys Asn Gly Ser Lys Tyr Gly Pro Asp
 290 295 300

ggg ctg ccc tac ctc aag gtt ctc aag cac tcg ggg ata aat agt tcc 1378
 Gly Leu Pro Tyr Leu Lys Val Leu Lys His Ser Gly Ile Asn Ser Ser
 305 310 315 320

aat gca gaa gtg ctg gct ctg ttc aat gtg acc gag gcg gat gct ggg 1426
 Asn Ala Glu Val Leu Ala Leu Phe Asn Val Thr Glu Ala Asp Ala Gly
 325 330 335

gaa tat ata tgt aag gtc tcc aat tat ata ggg cag gcc aac cag tct 1474
 Glu Tyr Ile Cys Lys Val Ser Asn Tyr Ile Gly Gln Ala Asn Gln Ser
 340 345 350

gcc tgg ctc act gtc ctg cca aaa cag caa gcg cct gga aga gaa aag 1522
 Ala Trp Leu Thr Val Leu Pro Lys Gln Gln Ala Pro Gly Arg Glu Lys
 355 360 365

gag att aca gct tcc cca gac tac ctg gag ata gcc att tac tgc ata 1570
 Glu Ile Thr Ala Ser Pro Asp Tyr Leu Glu Ile Ala Ile Tyr Cys Ile
 370 375 380

ggg gtc ttc tta atc gcc tgt atg gtg gta aca gtc atc ctg tgc cga 1618
 Gly Val Phe Leu Ile Ala Cys Met Val Val Thr Val Ile Leu Cys Arg
 385 390 395 400

atg aag aac acg acc aag aag cca gac ttc agc agc cag ccg gct gtg 1666
 Met Lys Asn Thr Thr Lys Lys Pro Asp Phe Ser Ser Gln Pro Ala Val
 405 410 415

cac aag ctg acc aaa cgt atc ccc ctg cgg aga cag gta aca gtt tcg 1714
 His Lys Leu Thr Lys Arg Ile Pro Leu Arg Arg Gln Val Thr Val Ser
 420 425 430

gct gag tcc agc tcc tcc atg aac tcc aac acc ccg ctg gtg agg ata 1762
 Ala Glu Ser Ser Ser Ser Met Asn Ser Asn Thr Pro Leu Val Arg Ile
 435 440 445

aca aca cgc ctc tct tca acg gca gac acc ccc atg ctg gca ggg gtc 1810
 Thr Thr Arg Leu Ser Ser Thr Ala Asp Thr Pro Met Leu Ala Gly Val
 450 455 460

tcc gag tat gaa ctt cca gag gac cca aaa tgg gag ttt cca aga gat 1858

Ser Glu Tyr Glu Leu Pro Glu Asp Pro Lys Trp Glu Phe Pro Arg Asp
 465 470 475 480

 aag ctg aca ctg ggc aag ccc ctg gga gaa ggt tgc ttt ggg caa gtg 1906
 Lys Leu Thr Leu Gly Lys Pro Leu Gly Glu Gly Cys Phe Gly Gln Val
 485 490 495

 gtc atg gcg gaa gca gtg gga att gac aaa gac aag ccc aag gag gcg 1954
 Val Met Ala Glu Ala Val Gly Ile Asp Lys Asp Lys Pro Lys Glu Ala
 500 505 510

 gtc acc gtg gcc gtg aag atg ttg aaa gat gat gcc aca gag aaa gac 2002
 Val Thr Val Ala Val Lys Met Leu Lys Asp Asp Ala Thr Glu Lys Asp
 515 520 525

 ctt tct gat ctg gtg tca gag atg gag atg atg aag atg att ggg aaa 2050
 Leu Ser Asp Leu Val Ser Glu Met Glu Met Met Lys Met Ile Gly Lys
 530 535 540

 cac aag aat atc ata aat ctt ctt gga gcc tgc aca cag gat ggg cct 2098
 His Lys Asn Ile Ile Asn Leu Leu Gly Ala Cys Thr Gln Asp Gly Pro
 545 550 555 560

 ctc tat gtc ata gtt gag tat gcc tct aaa ggc aac ctc cga gaa tac 2146
 Leu Tyr Val Ile Val Glu Tyr Ala Ser Lys Gly Asn Leu Arg Glu Tyr
 565 570 575

 ctc cga gcc cgg agg cca ccc ggg atg gag tac tcc tat gac att aac 2194
 Leu Arg Ala Arg Arg Pro Pro Gly Met Glu Tyr Ser Tyr Asp Ile Asn
 580 585 590

 cgt gtt cct gag gag cag atg acc ttc aag gac ttg gtg tca tgc acc 2242
 Arg Val Pro Glu Glu Gln Met Thr Phe Lys Asp Leu Val Ser Cys Thr
 595 600 605

 tac cag ctg gcc aga cgg atg gag tac ttg gct tcc caa aaa tgt att 2290
 Tyr Gln Leu Ala Arg Arg Met Glu Tyr Leu Ala Ser Gln Lys Cys Ile
 610 615 620

 cat cga gat tta gca gcc aga aat gtt ttg gta aca gaa aac aat gtg 2338
 His Arg Asp Leu Ala Ala Arg Asn Val Leu Val Thr Glu Asn Asn Val
 625 630 635 640

 atg aaa ata gca gac ttt gga ctc gcc aga gat atc aac aat ata gac 2386

Met Lys Ile Ala Asp Phe Gly Leu Ala Arg Asp Ile Asn Asn Ile Asp	
645 650 655	
tat tac aaa aag acc acc aat ggg cgg ctt cca gtc aag tgg atg gct	2434
Tyr Tyr Lys Lys Thr Thr Asn Gly Arg Leu Pro Val Lys Trp Met Ala	
660 665 670	
cca gaa gcc ctg ttt gat aga gta tac act cat cag agt gat gtc tgg	2482
Pro Glu Ala Leu Phe Asp Arg Val Tyr Thr His Gln Ser Asp Val Trp	
675 680 685	
tcc ttc ggg gtg tta atg tgg gag atc ttc act tta ggg ggc tcg ccc	2530
Ser Phe Gly Val Leu Met Trp Glu Ile Phe Thr Leu Gly Gly Ser Pro	
690 695 700	
tac cca ggg att ccc gtg gag gaa ctt ttt aag ctg ctg aag gaa gga	2578
Tyr Pro Gly Ile Pro Val Glu Glu Leu Phe Lys Leu Leu Lys Glu Gly	
705 710 715 720	
cac aga atg gat aag cca gcc aac tgc acc aac gaa ctg tac atg atg	2626
His Arg Met Asp Lys Pro Ala Asn Cys Thr Asn Glu Leu Tyr Met Met	
725 730 735	
atg agg gac tgt tgg cat gca gtg ccc tcc cag aga cca acg ttc aag	2674
Met Arg Asp Cys Trp His Ala Val Pro Ser Gln Arg Pro Thr Phe Lys	
740 745 750	
cag ttg gta gaa gac ttg gat cga att ctc act ctc aca acc aat gag	2722
Gln Leu Val Glu Asp Leu Asp Arg Ile Leu Thr Leu Thr Thr Asn Glu	
755 760 765	
cgg tac aag ctg ctt ccc tgt cct gac aag cac aat aaa agg tgc aaa	2770
Arg Tyr Lys Leu Leu Pro Cys Pro Asp Lys His Asn Lys Arg Cys Lys	
770 775 780	
cct gag gaa cgt ggg gac ctc aca gag gca ggc gca gcc ggc tca tcg	2818
Pro Glu Glu Arg Gly Asp Leu Thr Glu Ala Gly Ala Ala Gly Ser Ser	
785 790 795 800	
aga tgt gtg gac agc aga aag cga gtg agg caa gag aaa atc agc aca	2866
Arg Cys Val Asp Ser Arg Lys Arg Val Arg Gln Glu Lys Ile Ser Thr	
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Gly

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2923

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agccccgggag gcttggcgcc ggcgaagacc caaggaccac tcttctgcgt ttggagttgc 180

tccccgcaac cccgggctcg tcgctttctc catcccgacc cacgcggggc cggggacaac 240

acaggtcgag gaggagcgtt gccattcaag tgactgcagc agcagcgcag cgcctcgggt 300

cctgagccca ccgcagctga aggcattgag cgtagtccat gccgtagag gaagtgtgca 360

gatgggatta acgtccacat ggagatatgg aagaggaccg gggattggta ccgtaacc 418

atg gtc agc tgg ggt cgt ttc atc tgc ctg gtc gtg gtc acc atg gca 466

Met Val Ser Trp Gly Arg Phe Ile Cys Leu Val Val Val Thr Met Ala

1

5

10

15

acc ttg tcc ctg gcc cgg ccc tcc ttc agt tta gtt gag gat acc aca 514

Thr Leu Ser Leu Ala Arg Pro Ser Phe Ser Leu Val Glu Asp Thr Thr

20

25

30

tta gag cca gaa gag cca cca acc aaa tac caa atc tct caa cca gaa 562

Leu Glu Pro Glu Glu Pro Pro Thr Lys Tyr Gln Ile Ser Gln Pro Glu

35	40	45	
gtg tac gtg gct gcg cca ggg gag tcg cta gag gtg cgc tgc ctg ttg			610
Val Tyr Val Ala Ala Pro Gly Glu Ser Leu Glu Val Arg Cys Leu Leu			
50	55	60	
aaa gat gcc gcc gtg atc agt tgg act aag gat ggg gtg cac ttg ggg			658
Lys Asp Ala Ala Val Ile Ser Trp Thr Lys Asp Gly Val His Leu Gly			
65	70	75	80
ccc aac aat agg aca gtg ctt att ggg gag tac ttg cag ata aag ggc			706
Pro Asn Asn Arg Thr Val Leu Ile Gly Glu Tyr Leu Gln Ile Lys Gly			
	85	90	95
gcc aca cct aga gac tcc ggc ctc tat gct tgt act gcc agt agg act			754
Ala Thr Pro Arg Asp Ser Gly Leu Tyr Ala Cys Thr Ala Ser Arg Thr			
100	105	110	
gta gac agt gaa act tgg tac ttc atg gtg aat gtc aca gat gcc atc			802
Val Asp Ser Glu Thr Trp Tyr Phe Met Val Asn Val Thr Asp Ala Ile			
115	120	125	
tca tcc gga gat gat gag gat gac acc gat ggt gcg gaa gat ttt gtc			850
Ser Ser Gly Asp Asp Glu Asp Asp Thr Asp Gly Ala Glu Asp Phe Val			
130	135	140	
agt gag aac agt aac aac aag aga gca cca tac tgg acc aac aca gaa			898
Ser Glu Asn Ser Asn Asn Lys Arg Ala Pro Tyr Trp Thr Asn Thr Glu			
145	150	155	160
aag atg gaa aag cgg ctc cat gct gtg cct gcg gcc aac act gtc aag			946
Lys Met Glu Lys Arg Leu His Ala Val Pro Ala Ala Asn Thr Val Lys			
165	170	175	
ttt cgc tgc cca gcc ggg ggg aac cca atg cca acc atg cgg tgg ctg			994
Phe Arg Cys Pro Ala Gly Gly Asn Pro Met Pro Thr Met Arg Trp Leu			
180	185	190	
aaa aac ggg aag gag ttt aag cag gag cat cgc att gga ggc tac aag			1042
Lys Asn Gly Lys Glu Phe Lys Gln Glu His Arg Ile Gly Gly Tyr Lys			
195	200	205	
gta cga aac cag cac tgg agc ctc att atg gaa agt gtg gtc cca tct			1090
Val Arg Asn Gln His Trp Ser Leu Ile Met Glu Ser Val Val Pro Ser			

210	215	220	
gac aag gga aat tat acc tgt gta gtg gag aat gaa tac ggg tcc atc			1138
Asp Lys Gly Asn Tyr Thr Cys Val Val Glu Asn Glu Tyr Gly Ser Ile			
225	230	235	240
aat cac acg tac cac ctg gat gtt gtg gag cga tcg cct cac cgg ccc			1186
Asn His Thr Tyr His Leu Asp Val Val Glu Arg Ser Pro His Arg Pro			
245	250	255	
atc ctc caa gcc gga ctg ccg gca aat gcc tcc aca gtg gtc gga gga			1234
Ile Leu Gln Ala Gly Leu Pro Ala Asn Ala Ser Thr Val Val Gly Gly			
260	265	270	
gac gta gag ttt gtc tgc aag gtt tac agt gat gcc cag ccc cac atc			1282
Asp Val Glu Phe Val Cys Lys Val Tyr Ser Asp Ala Gln Pro His Ile			
275	280	285	
cag tgg atc aag cac gtg gaa aag aac ggc agt aaa tac ggg ccc gac			1330
Gln Trp Ile Lys His Val Glu Lys Asn Gly Ser Lys Tyr Gly Pro Asp			
290	295	300	
ggg ctg ccc tac ctc aag gtt ctc aag cac tcg ggg ata aat agt tcc			1378
Gly Leu Pro Tyr Leu Lys Val Leu Lys His Ser Gly Ile Asn Ser Ser			
305	310	315	320
aat gca gaa gtg ctg gct ctg ttc aat gtg acc gag gcg gat gct ggg			1426
Asn Ala Glu Val Leu Ala Leu Phe Asn Val Thr Glu Ala Asp Ala Gly			
325	330	335	
gaa tat ata tgt aag gtc tcc aat tat ata ggg cag gcc aac cag tct			1474
Glu Tyr Ile Cys Lys Val Ser Asn Tyr Ile Gly Gln Ala Asn Gln Ser			
340	345	350	
gcc tgg ctc act gtc ctg cca aaa cag caa gcg cct gga aga gaa aag			1522
Ala Trp Leu Thr Val Leu Pro Lys Gln Gln Ala Pro Gly Arg Glu Lys			
355	360	365	
gag att aca gct tcc cca gac tac ctg gag ata gcc att tac tgc ata			1570
Glu Ile Thr Ala Ser Pro Asp Tyr Leu Glu Ile Ala Ile Tyr Cys Ile			
370	375	380	
ggg gtc ttc tta atc gcc tgt atg gtg gta aca gtc atc ctg tgc cga			1618
Gly Val Phe Leu Ile Ala Cys Met Val Val Thr Val Ile Leu Cys Arg			

385	390	395	400	
atg aag aac acg acc aag aag cca gac ttc agc agc cag ccg gct gtg				1666
Met Lys Asn Thr Thr Lys Lys Pro Asp Phe Ser Ser Gln Pro Ala Val				
	405	410	415	
cac aag ctg acc aaa cgt atc ccc ctg cgg aga cag gta aca gtt tcg				1714
His Lys Leu Thr Lys Arg Ile Pro Leu Arg Arg Gln Val Thr Val Ser				
	420	425	430	
gct gag tcc agc tcc tcc atg aac tcc aac acc ccg ctg gtg agg ata				1762
Ala Glu Ser Ser Ser Met Asn Ser Asn Thr Pro Leu Val Arg Ile				
	435	440	445	
aca aca cgc ctc tct tca acg gca gac acc ccc atg ctg gca ggg gtc				1810
Thr Thr Arg Leu Ser Ser Thr Ala Asp Thr Pro Met Leu Ala Gly Val				
	450	455	460	
tcc gag tat gaa ctt cca gag gac cca aaa tgg gag ttt cca aga gat				1858
Ser Glu Tyr Glu Leu Pro Glu Asp Pro Lys Trp Glu Phe Pro Arg Asp				
	465	470	475	480
aag ctg aca ctg ggc aag ccc ctg gga gaa ggt tgc ttt ggg caa gtg				1906
Lys Leu Thr Leu Gly Lys Pro Leu Gly Glu Gly Cys Phe Gly Gln Val				
	485	490	495	
gtc atg gcg gaa gca gtg gga att gac aaa gac aag ccc aag gag gcg				1954
Val Met Ala Glu Ala Val Gly Ile Asp Lys Asp Lys Pro Lys Glu Ala				
	500	505	510	
gtc acc gtg gcc gtg aag atg ttg aaa gat gat gcc aca gag aaa gac				2002
Val Thr Val Ala Val Lys Met Leu Lys Asp Asp Ala Thr Glu Lys Asp				
	515	520	525	
ctt tct gat ctg gtg tca gag atg gag atg atg aag atg att ggg aaa				2050
Leu Ser Asp Leu Val Ser Glu Met Glu Met Met Lys Met Ile Gly Lys				
	530	535	540	
cac aag aat atc ata aat ctt ctt gga gcc tgc aca cag gat ggg cct				2098
His Lys Asn Ile Ile Asn Leu Leu Gly Ala Cys Thr Gln Asp Gly Pro				
	545	550	555	560
ctc tat gtc ata gtt gag tat gcc tct aaa ggc aac ctc cga gaa tac				2146
Leu Tyr Val Ile Val Glu Tyr Ala Ser Lys Gly Asn Leu Arg Glu Tyr				

	565	570	575	
ctc cga gcc cgg agg cca ccc ggg atg gag tac tcc tat gac att aac				2194
Leu Arg Ala Arg Arg Pro Pro Gly Met Glu Tyr Ser Tyr Asp Ile Asn				
	580	585	590	
cgt gtt cct gag gag cag atg acc ttc aag gac ttg gtg tca tgc acc				2242
Arg Val Pro Glu Glu Gln Met Thr Phe Lys Asp Leu Val Ser Cys Thr				
	595	600	605	
tac cag ctg gcc aga cgg atg gag tac ttg gct tcc caa aaa tgt att				2290
Tyr Gln Leu Ala Arg Arg Met Glu Tyr Leu Ala Ser Gln Lys Cys Ile				
	610	615	620	
cat cga gat tta gca gcc aga aat gtt ttg gta aca gaa aac aat gtg				2338
His Arg Asp Leu Ala Ala Arg Asn Val Leu Val Thr Glu Asn Asn Val				
	625	630	635	640
atg aaa ata gca gac ttt gga ctc gcc aga gat atc aac aat ata gac				2386
Met Lys Ile Ala Asp Phe Gly Leu Ala Arg Asp Ile Asn Asn Ile Asp				
	645	650	655	
tat tac aaa aag acc acc aat ggg cgg ctt cca gtc aag tgg atg gct				2434
Tyr Tyr Lys Lys Thr Thr Asn Gly Arg Leu Pro Val Lys Trp Met Ala				
	660	665	670	
cca gaa gcc ctg ttt gat aga gta tac act cat cag agt gat gtc tgg				2482
Pro Glu Ala Leu Phe Asp Arg Val Tyr Thr His Gln Ser Asp Val Trp				
	675	680	685	
tcc ttc ggg gtg tta atg tgg gag atc ttc act tta ggg ggc tcg ccc				2530
Ser Phe Gly Val Leu Met Trp Glu Ile Phe Thr Leu Gly Gly Ser Pro				
	690	695	700	
tac cca ggg att ccc gtg gag gaa ctt ttt aag ctg ctg aag gaa gga				2578
Tyr Pro Gly Ile Pro Val Glu Glu Leu Phe Lys Leu Leu Lys Glu Gly				
	705	710	715	720
cac aga atg gat aag cca gcc aac tgc acc aac gaa ctg tac atg atg				2626
His Arg Met Asp Lys Pro Ala Asn Cys Thr Asn Glu Leu Tyr Met Met				
	725	730	735	
atg agg gac tgt tgg cat gca gtg ccc tcc cag aga cca acg ttc aag				2674
Met Arg Asp Cys Trp His Ala Val Pro Ser Gln Arg Pro Thr Phe Lys				

740 745 750

cag ttg gta gaa gac ttg gat cga att ctc act ctc aca acc aat gag 2722
Gln Leu Val Glu Asp Leu Asp Arg Ile Leu Thr Leu Thr Thr Asn Glu
755 760 765

taa agccaaggat atgggagggg aaaaaagggg aaagagtcac ggaaagccag 2775

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ctc agt cag cct ctc gaa ccg tat tca cct tgt tat cct gac cca aga 96
Leu Ser Gln Pro Leu Glu Pro Tyr Ser Pro Cys Tyr Pro Asp Pro Arg
20 25 30

tga aataaaacgt ctctcttccc ttctttcagg aataacttga cctcagccaa 149

cctctcgaac agtattcacc tagttaccct gacacaagaa gttcttggtc ttcaggagat 209

gattctgttt tttctccaga ccccatgcct tacgaacct gccttctca gatatcacac 269

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 Met
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 gtc agc tgg ggt cgt ttc atc tgc ctg gtc gtg gtc acc atg gca acc 645
 Val Ser Trp Gly Arg Phe Ile Cys Leu Val Val Val Thr Met Ala Thr
 5 10 15
 ttg tcc ctg gcc cgg ccc tcc ttc agt tta gtt gag gat acc aca tta 693
 Leu Ser Leu Ala Arg Pro Ser Phe Ser Leu Val Glu Asp Thr Thr Leu
 20 25 30
 gag cca gaa gat gcc atc tca tcc gga gat gat gag gat gac acc gat 741
 Glu Pro Glu Asp Ala Ile Ser Ser Gly Asp Asp Glu Asp Asp Thr Asp

35	40	45	
ggt gcg gaa gat ttt gtc agt gag aac agt aac aac aag aga gca cca			789
Gly Ala Glu Asp Phe Val Ser Glu Asn Ser Asn Asn Lys Arg Ala Pro			
50	55	60	65
tac tgg acc aac aca gaa aag atg gaa aag cgg ctc cat gct gtg cct			837
Tyr Trp Thr Asn Thr Glu Lys Met Glu Lys Arg Leu His Ala Val Pro			
	70	75	80
gcg gcc aac act gtc aag ttt cgc tgc cca gcc ggg ggg aac cca atg			885
Ala Ala Asn Thr Val Lys Phe Arg Cys Pro Ala Gly Gly Asn Pro Met			
	85	90	95
cca acc atg cgg tgg ctg aaa aac ggg aag gag ttt aag cag gag cat			933
Pro Thr Met Arg Trp Leu Lys Asn Gly Lys Glu Phe Lys Gln Glu His			
	100	105	110
cgc att gga ggc tac aag gta cga aac cag cac tgg agc ctc att atg			981
Arg Ile Gly Gly Tyr Lys Val Arg Asn Gln His Trp Ser Leu Ile Met			
	115	120	125
gaa agt gtg gtc cca tct gac aag gga aat tat acc tgt gtg gtg gag			1029
Glu Ser Val Val Pro Ser Asp Lys Gly Asn Tyr Thr Cys Val Val Glu			
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aat gaa tac ggg tcc atc aat cac acg tac cac ctg gat gtt gtg gag			1077
Asn Glu Tyr Gly Ser Ile Asn His Thr Tyr His Leu Asp Val Val Glu			
	150	155	160
cga tcg cct cac cgg ccc atc ctc caa gcc gga ctg ccg gca aat gcc			1125
Arg Ser Pro His Arg Pro Ile Leu Gln Ala Gly Leu Pro Ala Asn Ala			
	165	170	175
tcc aca gtg gtc gga gga gac gta gag ttt gtc tgc aag gtt tac agt			1173
Ser Thr Val Val Gly Gly Asp Val Glu Phe Val Cys Lys Val Tyr Ser			
	180	185	190
gat gcc cag ccc cac atc cag tgg atc aag cac gtg gaa aag aac ggc			1221
Asp Ala Gln Pro His Ile Gln Trp Ile Lys His Val Glu Lys Asn Gly			
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agt aaa tac ggg ccc gac ggg ctg ccc tac ctc aag gtt ctc aag cac			1269
Ser Lys Tyr Gly Pro Asp Gly Leu Pro Tyr Leu Lys Val Leu Lys His			

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tcg ggg ata aat agt tcc aat gca gaa gtg ctg gct ctg ttc aat gtg				1317
Ser Gly Ile Asn Ser Ser Asn Ala Glu Val Leu Ala Leu Phe Asn Val				
	230	235	240	
acc gag gcg gat gct ggg gaa tat ata tgt aag gtc tcc aat tat ata				1365
Thr Glu Ala Asp Ala Gly Glu Tyr Ile Cys Lys Val Ser Asn Tyr Ile				
	245	250	255	
ggg cag gcc aac cag tct gcc tgg ctc act gtc ctg cca aaa cag caa				1413
Gly Gln Ala Asn Gln Ser Ala Trp Leu Thr Val Leu Pro Lys Gln Gln				
	260	265	270	
gcg cct gga aga gaa aag gag att aca gct tcc cca gac tac ctg gag				1461
Ala Pro Gly Arg Glu Lys Glu Ile Thr Ala Ser Pro Asp Tyr Leu Glu				
	275	280	285	
ata gcc att tac tgc ata ggg gtc ttc tta atc gcc tgt atg gtg gta				1509
Ile Ala Ile Tyr Cys Ile Gly Val Phe Leu Ile Ala Cys Met Val Val				
290	295	300	305	
aca gtc atc ctg tgc cga atg aag aac acg acc aag aag cca gac ttc				1557
Thr Val Ile Leu Cys Arg Met Lys Asn Thr Thr Lys Lys Pro Asp Phe				
	310	315	320	
agc agc cag ccg gct gtg cac aag ctg acc aaa cgt atc ccc ctg cgg				1605
Ser Ser Gln Pro Ala Val His Lys Leu Thr Lys Arg Ile Pro Leu Arg				
	325	330	335	
aga cag gtt tcg gct gag tcc agc tcc tcc atg aac tcc aac acc ccg				1653
Arg Gln Val Ser Ala Glu Ser Ser Ser Ser Met Asn Ser Asn Thr Pro				
	340	345	350	
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Leu Val Arg Ile Thr Thr Arg Leu Ser Ser Thr Ala Asp Thr Pro Met				
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Leu Ala Gly Val Ser Glu Tyr Glu Leu Pro Glu Asp Pro Lys Trp Glu				
370	375	380	385	
ttt cca aga gat aag ctg aca ctg ggc aag ccc ctg gga gaa ggt tgc				1797
Phe Pro Arg Asp Lys Leu Thr Leu Gly Lys Pro Leu Gly Glu Gly Cys				

	390	395	400	
ttt ggg caa gtg gtc atg gcg gaa gca gtg gga att gac aaa gac aag				1845
Phe Gly Gln Val Val Met Ala Glu Ala Val Gly Ile Asp Lys Asp Lys				
	405	410	415	
ccc aag gag gcg gtc acc gtg gcc gtg aag atg ttg aaa gat gat gcc				1893
Pro Lys Glu Ala Val Thr Val Ala Val Lys Met Leu Lys Asp Asp Ala				
	420	425	430	
aca gag aaa gac ctt tct gat ctg gtg tca gag atg gag atg atg aag				1941
Thr Glu Lys Asp Leu Ser Asp Leu Val Ser Glu Met Glu Met Met Lys				
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atg att ggg aaa cac aag aat atc ata aat ctt ctt gga gcc tgc aca				1989
Met Ile Gly Lys His Lys Asn Ile Ile Asn Leu Leu Gly Ala Cys Thr				
	450	455	460	465
cag gat ggg cct ctc tat gtc ata gtt gag tat gcc tct aaa ggc aac				2037
Gln Asp Gly Pro Leu Tyr Val Ile Val Glu Tyr Ala Ser Lys Gly Asn				
	470	475	480	
ctc cga gaa tac ctc cga gcc cgg agg cca ccc ggg atg gag tac tcc				2085
Leu Arg Glu Tyr Leu Arg Ala Arg Arg Pro Pro Gly Met Glu Tyr Ser				
	485	490	495	
tat gac att aac cgt gtt cct gag gag cag atg acc ttc aag gac ttg				2133
Tyr Asp Ile Asn Arg Val Pro Glu Glu Gln Met Thr Phe Lys Asp Leu				
	500	505	510	
gtg tca tgc acc tac cag ctg gcc aga ggc atg gag tac ttg gct tcc				2181
Val Ser Cys Thr Tyr Gln Leu Ala Arg Gly Met Glu Tyr Leu Ala Ser				
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caa aaa tgt att cat cga gat tta gca gcc aga aat gtt ttg gta aca				2229
Gln Lys Cys Ile His Arg Asp Leu Ala Ala Arg Asn Val Leu Val Thr				
	530	535	540	545
gaa aac aat gtg atg aaa ata gca gac ttt gga ctc gcc aga gat atc				2277
Glu Asn Asn Val Met Lys Ile Ala Asp Phe Gly Leu Ala Arg Asp Ile				
	550	555	560	
aac aat ata gac tat tac aaa aag acc acc aat ggg cgg ctt cca gtc				2325
Asn Asn Ile Asp Tyr Tyr Lys Lys Thr Thr Asn Gly Arg Leu Pro Val				

565	570	575	
aag tgg atg gct cca gaa gcc ctg ttt gat aga gta tac act cat cag			2373
Lys Trp Met Ala Pro Glu Ala Leu Phe Asp Arg Val Tyr Thr His Gln			
580	585	590	
agt gat gtc tgg tcc ttc ggg gtg tta atg tgg gag atc ttc act tta			2421
Ser Asp Val Trp Ser Phe Gly Val Leu Met Trp Glu Ile Phe Thr Leu			
595	600	605	
ggg ggc tcg ccc tac cca ggg att ccc gtg gag gaa ctt ttt aag ctg			2469
Gly Gly Ser Pro Tyr Pro Gly Ile Pro Val Glu Glu Leu Phe Lys Leu			
610	615	620	625
ctg aag gaa gga cac aga atg gat aag cca gcc aac tgc acc aac gaa			2517
Leu Lys Glu Gly His Arg Met Asp Lys Pro Ala Asn Cys Thr Asn Glu			
630	635	640	
ctg tac atg atg atg agg gac tgt tgg cat gca gtg ccc tcc cag aga			2565
Leu Tyr Met Met Met Arg Asp Cys Trp His Ala Val Pro Ser Gln Arg			
645	650	655	
cca acg ttc aag cag ttg gta gaa gac ttg gat cga att ccc ccc aac			2613
Pro Thr Phe Lys Gln Leu Val Glu Asp Leu Asp Arg Ile Pro Pro Asn			
660	665	670	
cct tcc ctt atg agc att ttt aga aaa tag tcttagccaa tgttctaaaa			2663
Pro Ser Leu Met Ser Ile Phe Arg Lys			
675	680		
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caacgggaac ttggatggat acagtctggg cctgctgggc cagatgttcc gagggcggcc			2783
cggcaagcag cctgtcttgc acattgcaac tgactggctt aatctacggc aagagtcctt			2843
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 ccccaaatcc gagggcagcc cgcgggcgtc atgcccgcgc tcctccgcag cctgggggtac 180
 gcgtgaagcc cgggaggctt ggcgccggcg aagacccaag gaccactctt ctgcgtttgg 240
 agttgctccc cccaaccccg ggctcgtcgc tttctccatc ccgaccacag cggggcgcg 300
 ggacaacaca ggtcgcggag gagcgttgcc attcaagtga ctgcagcagc agcggcagcg 360
 cctcggttcc tgagcccacc gcaggctgaa ggcattgcgc gtagtccatg cccgtagagg 420
 aagtgtgcag atgggattaa cgtccacatg gagatatgga agaggaccgg ggattgggtac 480
 cgtaacc atg gtc agc tgg ggt cgt ttc atc tgc ctg gtc gtg gtc acc 529
 Met Val Ser Trp Gly Arg Phe Ile Cys Leu Val Val Val Thr
 1 5 10
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 Met Ala Thr Leu Ser Leu Ala Arg Pro Ser Phe Ser Leu Val Glu Asp
 15 20 25 30
 acc aca tta gag cca gaa gag cca cca acc aaa tac caa atc tct caa 625
 Thr Thr Leu Glu Pro Glu Glu Pro Pro Thr Lys Tyr Gln Ile Ser Gln
 35 40 45
 cca gaa gtg tac gtg gct gcg cca ggg gag tcg cta gag gtg cgc tgc 673
 Pro Glu Val Tyr Val Ala Ala Pro Gly Glu Ser Leu Glu Val Arg Cys
 50 55 60

ctg ttg aaa gat gcc gcc gtg atc agt tgg act aag gat ggg gtg cac	721
Leu Leu Lys Asp Ala Ala Val Ile Ser Trp Thr Lys Asp Gly Val His	
65 70 75	
ttg ggg ccc aac aat agg aca gtg ctt att ggg gag tac ttg cag ata	769
Leu Gly Pro Asn Asn Arg Thr Val Leu Ile Gly Glu Tyr Leu Gln Ile	
80 85 90	
aag ggc gcc acg cct aga gac tcc ggc ctc tat gct tgt act gcc agt	817
Lys Gly Ala Thr Pro Arg Asp Ser Gly Leu Tyr Ala Cys Thr Ala Ser	
95 100 105 110	
agg act gta gac agt gaa act tgg tac ttc atg gtg aat gtc aca gat	865
Arg Thr Val Asp Ser Glu Thr Trp Tyr Phe Met Val Asn Val Thr Asp	
115 120 125	
gcc atc tca tcc gga gat gat gag gat gac acc gat ggt gcg gaa gat	913
Ala Ile Ser Ser Gly Asp Asp Glu Asp Asp Thr Asp Gly Ala Glu Asp	
130 135 140	
ttt gtc agt gag aac agt aac aac aag aga gca cca tac tgg acc aac	961
Phe Val Ser Glu Asn Ser Asn Asn Lys Arg Ala Pro Tyr Trp Thr Asn	
145 150 155	
aca gaa aag atg gaa aag cgg ctc cat gct gtg cct gcg gcc aac act	1009
Thr Glu Lys Met Glu Lys Arg Leu His Ala Val Pro Ala Ala Asn Thr	
160 165 170	
gtc aag ttt cgc tgc cca gcc ggg ggg aac cca atg cca acc atg cgg	1057
Val Lys Phe Arg Cys Pro Ala Gly Gly Asn Pro Met Pro Thr Met Arg	
175 180 185 190	
tgg ctg aaa aac ggg aag gag ttt aag cag gag cat cgc att gga ggc	1105
Trp Leu Lys Asn Gly Lys Glu Phe Lys Gln Glu His Arg Ile Gly Gly	
195 200 205	
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Tyr Lys Val Arg Asn Gln His Trp Ser Leu Ile Met Glu Ser Val Val	
210 215 220	
cca tct gac aag gga aat tat acc tgt gtg gtg gag aat gaa tac ggg	1201
Pro Ser Asp Lys Gly Asn Tyr Thr Cys Val Val Glu Asn Glu Tyr Gly	
225 230 235	

tcc atc aat cac acg tac cac ctg gat gtt gtg gag cga tcg cct cac	1249
Ser Ile Asn His Thr Tyr His Leu Asp Val Val Glu Arg Ser Pro His	
240 245 250	
cgg ccc atc ctc caa gcc gga ctg ccg gca aat gcc tcc aca gtg gtc	1297
Arg Pro Ile Leu Gln Ala Gly Leu Pro Ala Asn Ala Ser Thr Val Val	
255 260 265 270	
gga gga gac gta gag ttt gtc tgc aag gtt tac agt gat gcc cag ccc	1345
Gly Gly Asp Val Glu Phe Val Cys Lys Val Tyr Ser Asp Ala Gln Pro	
275 280 285	
cac atc cag tgg atc aag cac gtg gaa aag aac ggc agt aaa tac ggg	1393
His Ile Gln Trp Ile Lys His Val Glu Lys Asn Gly Ser Lys Tyr Gly	
290 295 300	
ccc gac ggg ctg ccc tac ctc aag gtt ctc aag gtt tcg gct gag tcc	1441
Pro Asp Gly Leu Pro Tyr Leu Lys Val Leu Lys Val Ser Ala Glu Ser	
305 310 315	
agc tcc tcc atg aac tcc aac acc ccg ctg gtg agg ata aca aca cgc	1489
Ser Ser Ser Met Asn Ser Asn Thr Pro Leu Val Arg Ile Thr Thr Arg	
320 325 330	
ctc tct tca acg gca gac acc ccc atg ctg gca ggg gtc tcc gag tat	1537
Leu Ser Ser Thr Ala Asp Thr Pro Met Leu Ala Gly Val Ser Glu Tyr	
335 340 345 350	
gaa ctt cca gag gac cca aaa tgg gag ttt cca aga gat aag ctg aca	1585
Glu Leu Pro Glu Asp Pro Lys Trp Glu Phe Pro Arg Asp Lys Leu Thr	
355 360 365	
ctg ggc aag ccc ctg gga gaa ggt tgc ttt ggg caa gtg gtc atg gcg	1633
Leu Gly Lys Pro Leu Gly Glu Gly Cys Phe Gly Gln Val Val Met Ala	
370 375 380	
gaa gca gtg gga att gac aaa gac aag ccc aag gag gcg gtc acc gtg	1681
Glu Ala Val Gly Ile Asp Lys Asp Lys Pro Lys Glu Ala Val Thr Val	
385 390 395	
gcc gtg aag atg ttg aaa gat gat gcc aca gag aaa gac ctt tct gat	1729
Ala Val Lys Met Leu Lys Asp Asp Ala Thr Glu Lys Asp Leu Ser Asp	
400 405 410	

ctg	gtg	tca	gag	atg	gag	atg	atg	aag	atg	att	ggg	aaa	cac	aag	aat	1777
Leu	Val	Ser	Glu	Met	Glu	Met	Met	Lys	Met	Ile	Gly	Lys	His	Lys	Asn	
415					420					425					430	
atc	ata	aat	ctt	ctt	gga	gcc	tgc	aca	cag	gat	ggg	cct	ctc	tat	gtc	1825
Ile	Ile	Asn	Leu	Leu	Gly	Ala	Cys	Thr	Gln	Asp	Gly	Pro	Leu	Tyr	Val	
				435					440					445		
ata	gtt	gag	tat	gcc	tct	aaa	ggc	aac	ctc	cga	gaa	tac	ctc	cga	gcc	1873
Ile	Val	Glu	Tyr	Ala	Ser	Lys	Gly	Asn	Leu	Arg	Glu	Tyr	Leu	Arg	Ala	
			450					455					460			
cgg	agg	cca	ccc	ggg	atg	gag	tac	tcc	tat	gac	att	aac	cgt	gtt	cct	1921
Arg	Arg	Pro	Pro	Gly	Met	Glu	Tyr	Ser	Tyr	Asp	Ile	Asn	Arg	Val	Pro	
	465						470					475				
gag	gag	cag	atg	acc	ttc	aag	gac	ttg	gtg	tca	tgc	acc	tac	cag	ctg	1969
Glu	Glu	Gln	Met	Thr	Phe	Lys	Asp	Leu	Val	Ser	Cys	Thr	Tyr	Gln	Leu	
	480					485					490					
gcc	aga	ggc	atg	gag	tac	ttg	gct	tcc	caa	aaa	tgt	att	cat	cga	gat	2017
Ala	Arg	Gly	Met	Glu	Tyr	Leu	Ala	Ser	Gln	Lys	Cys	Ile	His	Arg	Asp	
495					500					505					510	
tta	gca	gcc	aga	aat	gtt	ttg	gta	aca	gaa	aac	aat	gtg	atg	aaa	ata	2065
Leu	Ala	Ala	Arg	Asn	Val	Leu	Val	Thr	Glu	Asn	Asn	Val	Met	Lys	Ile	
				515					520					525		
gca	gac	ttt	gga	ctc	gcc	aga	gat	atc	aac	aat	ata	gac	tat	tac	aaa	2113
Ala	Asp	Phe	Gly	Leu	Ala	Arg	Asp	Ile	Asn	Asn	Ile	Asp	Tyr	Tyr	Lys	
			530					535					540			
aag	acc	acc	aat	ggg	cgg	ctt	cca	gtc	aag	tgg	atg	gct	cca	gaa	gcc	2161
Lys	Thr	Thr	Asn	Gly	Arg	Leu	Pro	Val	Lys	Trp	Met	Ala	Pro	Glu	Ala	
		545					550					555				
ctg	ttt	gat	aga	gta	tac	act	cat	cag	agt	gat	gtc	tgg	tcc	ttc	ggg	2209
Leu	Phe	Asp	Arg	Val	Tyr	Thr	His	Gln	Ser	Asp	Val	Trp	Ser	Phe	Gly	
	560					565					570					
gtg	tta	atg	tgg	gag	atc	ttc	act	tta	ggg	ggc	tcg	ccc	tac	cca	ggg	2257
Val	Leu	Met	Trp	Glu	Ile	Phe	Thr	Leu	Gly	Gly	Ser	Pro	Tyr	Pro	Gly	
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 Ile Pro Val Glu Glu Leu Phe Lys Leu Leu Lys Glu Gly His Arg Met
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gat aag cca gcc aac tgc acc aac gaa ctg tac atg atg atg agg gac 2353
 Asp Lys Pro Ala Asn Cys Thr Asn Glu Leu Tyr Met Met Met Arg Asp
 610 615 620

tgt tgg cat gca gtg ccc tcc cag aga cca acg ttc aag cag ttg gta 2401
 Cys Trp His Ala Val Pro Ser Gln Arg Pro Thr Phe Lys Gln Leu Val
 625 630 635

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 640 645 650

gac ctc agc caa cct ctc gaa cag tat tca cct agt tac cct gac aca 2497
 Asp Leu Ser Gln Pro Leu Glu Gln Tyr Ser Pro Ser Tyr Pro Asp Thr
 655 660 665 670

aga agt tct tgt tct tca gga gat gat tct gtt ttt tct cca gac ccc 2545
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 675 680 685

atg cct tac gaa cca tgc ctt cct cag tat cca cac ata aac ggc agt 2593
 Met Pro Tyr Glu Pro Cys Leu Pro Gln Tyr Pro His Ile Asn Gly Ser
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gtt aaa aca tga atgactgtgt ctgcctgtcc ccaaacagga cagcactggg 2645
 Val Lys Thr
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Met Val Ser Trp Gly Arg Phe Ile Cys Leu Val Val Val

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Thr Met Ala Thr Leu Ser Leu Ala Arg Pro Ser Phe Ser Leu Val Glu			
15	20	25	
gat acc aca tta gag cca gaa gag cca cca acc aaa tac caa atc tct			746
Asp Thr Thr Leu Glu Pro Glu Glu Pro Pro Thr Lys Tyr Gln Ile Ser			
30	35	40	45
caa cca gaa gtg tac gtg gct gcg cca ggg gag tcg cta gag gtg cgc			794
Gln Pro Glu Val Tyr Val Ala Ala Pro Gly Glu Ser Leu Glu Val Arg			
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Cys Leu Leu Lys Asp Ala Ala Val Ile Ser Trp Thr Lys Asp Gly Val			
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Ile Lys Gly Ala Thr Pro Arg Asp Ser Gly Leu Tyr Ala Cys Thr Ala			
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Ser Arg Thr Val Asp Ser Glu Thr Trp Tyr Phe Met Val Asn Val Thr			
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gat gcc atc tca tcc gga gat gat gag gat gac acc gat ggt gcg gaa			1034
Asp Ala Ile Ser Ser Gly Asp Asp Glu Asp Asp Thr Asp Gly Ala Glu			
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Asp Phe Val Ser Glu Asn Ser Asn Asn Lys Arg Ala Pro Tyr Trp Thr			
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Asn Thr Glu Lys Met Glu Lys Arg Leu His Ala Val Pro Ala Ala Asn			
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Thr Val Lys Phe Arg Cys Pro Ala Gly Gly Asn Pro Met Pro Thr Met			

175	180	185	
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Arg Trp Leu Lys Asn Gly Lys Glu Phe Lys Gln Glu His Arg Ile Gly			
190	195	200	205
ggc tac aag gta cga aac cag cac tgg agc ctc att atg gaa agt gtg			1274
Gly Tyr Lys Val Arg Asn Gln His Trp Ser Leu Ile Met Glu Ser Val			
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gtc cca tct gac aag gga aat tat acc tgt gtg gtg gag aat gaa tac			1322
Val Pro Ser Asp Lys Gly Asn Tyr Thr Cys Val Val Glu Asn Glu Tyr			
	225	230	235
ggg tcc atc aat cac acg tac cac ctg gat gtt gtg gag cga tcg cct			1370
Gly Ser Ile Asn His Thr Tyr His Leu Asp Val Val Glu Arg Ser Pro			
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cac cgg ccc atc ctc caa gcc gga ctg ccg gca aat gcc tcc aca gtg			1418
His Arg Pro Ile Leu Gln Ala Gly Leu Pro Ala Asn Ala Ser Thr Val			
	255	260	265
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Val Gly Gly Asp Val Glu Phe Val Cys Lys Val Tyr Ser Asp Ala Gln			
	270	275	280
ccc cac atc cag tgg atc aag cac gtg gaa aag aac ggc agt aaa tac			1514
Pro His Ile Gln Trp Ile Lys His Val Glu Lys Asn Gly Ser Lys Tyr			
	290	295	300
ggg ccc gac ggg ctg ccc tac ctc aag gtt ctc aag cac tcg ggg ata			1562
Gly Pro Asp Gly Leu Pro Tyr Leu Lys Val Leu Lys His Ser Gly Ile			
	305	310	315
aat agt tcc aat gca gaa gtg ctg gct ctg ttc aat gtg acc gag gcg			1610
Asn Ser Ser Asn Ala Glu Val Leu Ala Leu Phe Asn Val Thr Glu Ala			
	320	325	330
gat gct ggg gaa tat ata tgt aag gtc tcc aat tat ata ggg cag gcc			1658
Asp Ala Gly Glu Tyr Ile Cys Lys Val Ser Asn Tyr Ile Gly Gln Ala			
	335	340	345
aac cag tct gcc tgg ctc act gtc ctg cca aaa cag caa gcg cct gga			1706
Asn Gln Ser Ala Trp Leu Thr Val Leu Pro Lys Gln Gln Ala Pro Gly			

350	355	360	365	
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Arg Glu Lys Glu Ile Thr Ala Ser Pro Asp Tyr Leu Glu Ile Ala Ile				
370	375	380		
tac tgc ata ggg gtc ttc tta atc gcc tgt atg gtg gta aca gtc atc				1802
Tyr Cys Ile Gly Val Phe Leu Ile Ala Cys Met Val Val Thr Val Ile				
385	390	395		
ctg tgc cga atg aag aac acg acc aag aag cca gac ttc agc agc cag				1850
Leu Cys Arg Met Lys Asn Thr Thr Lys Lys Pro Asp Phe Ser Ser Gln				
400	405	410		
ccg gct gtg cac aag ctg acc aaa cgt atc ccc ctg cgg aga cag gta				1898
Pro Ala Val His Lys Leu Thr Lys Arg Ile Pro Leu Arg Arg Gln Val				
415	420	425		
aca gtt tcg gct gag tcc agc tcc tcc atg aac tcc aac acc ccg ctg				1946
Thr Val Ser Ala Glu Ser Ser Ser Ser Met Asn Ser Asn Thr Pro Leu				
430	435	440	445	
gtg agg ata aca aca cgc ctc tct tca acg gca gac acc ccc atg ctg				1994
Val Arg Ile Thr Thr Arg Leu Ser Ser Thr Ala Asp Thr Pro Met Leu				
450	455	460		
gca ggg gtc tcc gag tat gaa ctt cca gag gac cca aaa tgg gag ttt				2042
Ala Gly Val Ser Glu Tyr Glu Leu Pro Glu Asp Pro Lys Trp Glu Phe				
465	470	475		
cca aga gat aag ctg aca ctg ggc aag ccc ctg gga gaa ggt tgc ttt				2090
Pro Arg Asp Lys Leu Thr Leu Gly Lys Pro Leu Gly Glu Gly Cys Phe				
480	485	490		
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Gly Gln Val Val Met Ala Glu Ala Val Gly Ile Asp Lys Asp Lys Pro				
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aag gag gcg gtc acc gtg gcc gtg aag atg ttg aaa gat gat gcc aca				2186
Lys Glu Ala Val Thr Val Ala Val Lys Met Leu Lys Asp Asp Ala Thr				
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Glu Lys Asp Leu Ser Asp Leu Val Ser Glu Met Glu Met Met Lys Met				

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Ile Gly Lys His Lys Asn Ile Ile Asn Leu Leu Gly Ala Cys Thr Gln			
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Asp Gly Pro Leu Tyr Val Ile Val Glu Tyr Ala Ser Lys Gly Asn Leu			
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cga gaa tac ctc cga gcc cgg agg cca ccc ggg atg gag tac tcc tat			2378
Arg Glu Tyr Leu Arg Ala Arg Arg Pro Pro Gly Met Glu Tyr Ser Tyr			
575	580	585	
gac att aac cgt gtt cct gag gag cag atg acc ttc aag gac ttg gtg			2426
Asp Ile Asn Arg Val Pro Glu Glu Gln Met Thr Phe Lys Asp Leu Val			
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tca tgc acc tac cag ctg gcc aga ggc atg gag tac ttg gct tcc caa			2474
Ser Cys Thr Tyr Gln Leu Ala Arg Gly Met Glu Tyr Leu Ala Ser Gln			
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Lys Cys Ile His Arg Asp Leu Ala Ala Arg Asn Val Leu Val Thr Glu			
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Asn Asn Val Met Lys Ile Ala Asp Phe Gly Leu Ala Arg Asp Ile Asn			
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Asn Ile Asp Tyr Tyr Lys Lys Thr Thr Asn Gly Arg Leu Pro Val Lys			
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tgg atg gct cca gaa gcc ctg ttt gat aga gta tac act cat cag agt			2666
Trp Met Ala Pro Glu Ala Leu Phe Asp Arg Val Tyr Thr His Gln Ser			
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Asp Val Trp Ser Phe Gly Val Leu Met Trp Glu Ile Phe Thr Leu Gly			
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Gly Ser Pro Tyr Pro Gly Ile Pro Val Glu Glu Leu Phe Lys Leu Leu			

705	710	715	
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Lys Glu Gly His Arg Met Asp Lys Pro Ala Asn Cys Thr Asn Glu Leu			
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Tyr Met Met Met Arg Asp Cys Trp His Ala Val Pro Ser Gln Arg Pro			
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Thr Phe Lys Gln Leu Val Glu Asp Leu Asp Arg Ile Leu Thr Leu Thr			
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acc aat gag gaa tac ttg gac ctc agc caa cct ctc gaa cag tat tca			2954
Thr Asn Glu Glu Tyr Leu Asp Leu Ser Gln Pro Leu Glu Gln Tyr Ser			
770	775	780	
cct agt tac cct gac aca aga agt tct tgt tct tca gga gat gat tct			3002
Pro Ser Tyr Pro Asp Thr Arg Ser Ser Cys Ser Ser Gly Asp Asp Ser			
785	790	795	
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Val Phe Ser Pro Asp Pro Met Pro Tyr Glu Pro Cys Leu Pro Gln Tyr			
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<213> Homo sapiens

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Met Val Ser Trp Gly Arg	
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Phe Ile Cys Leu Val Val Val Thr Met Ala Thr Leu Ser Leu Ala Arg	
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Pro Ser Phe Ser Leu Val Glu Asp Thr Thr Leu Glu Pro Glu Glu Pro	
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Pro Thr Lys Tyr Gln Ile Ser Gln Pro Glu Val Tyr Val Ala Ala Pro	
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Gly Glu Ser Leu Glu Val Arg Cys Leu Leu Lys Asp Ala Ala Val Ile	
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Ser Trp Thr Lys Asp Gly Val His Leu Gly Pro Asn Asn Arg Thr Val	
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Leu Ile Gly Glu Tyr Leu Gln Ile Lys Gly Ala Thr Pro Arg Asp Ser	
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Gly Leu Tyr Ala Cys Thr Ala Ser Arg Thr Val Asp Ser Glu Thr Trp	
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1541

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<211> 1475

<212> DNA

<213> Homo sapiens

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<211> 36221

<212> DNA

<213> Homo sapiens

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<221> misc_feature

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<400> 29

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